

Dr. SEBASTIAN KRIEGER

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- About • I solve complex problems using data, algorithms, and a combination of technical expertise, problem-solving skills and intuition. Whether I'm improving existing systems or breaking new ground, I approach every challenge with curiosity and precision. As a seasoned researcher and data expert, I specialize in leveraging data and advanced computational techniques to optimize data workflows and empower evidence-based decision-making. My expertise spans machine learning, artificial neural networks, data analysis, ocean hydrodynamic numerical modelling, satellite remote sensing and software development.
- Research background • Ph.D. in Physical Oceanography, focusing on global ocean dynamics using satellite altimetry.
- Postdoctoral research in near-shore ocean observation, ocean color satellite remote sensing, and hydrodynamic and bio-physical numerical modeling.
- Core expertise • *End-to-end data management*: Design and implement data workflows, including ETL pipeline development, data curation, and integration.
- *Machine learning & AI*: Build and deploy production-ready machine learning models for data generation, predictive analytics, and quality control.
- *Technical leadership*: Lead data-driven projects and mentor junior colleagues, fostering their professional growth along the way.
- *Communication*: Distill complex technical findings into clear, actionable insights for diverse stakeholders.
- *Collaboration*: Work effectively with multi-disciplinary, cross-cultural teams—both remotely and in-person—to drive successful project outcomes.
- *Software development best practices*: Including test-driven development (TDD), clean code, data governance, and agile methodologies.
- *Open to relocation*: As a dual Brazilian and an EU citizen, I am available for relocation opportunities within Europe and beyond.
- Language skills • Fluent in English and Portuguese.
- Conversational fluency in French, German, and Spanish.
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SELECTED WORK & RESEARCH EXPERIENCE

2018–present **Bloomberg**

São Paulo, SP

Senior data scientist / data engineer

Led the design, implementation, and maintenance of 30+ data workflows and ETL pipelines for financial data products, processing millions of records daily and ensuring seamless delivery to clients • Developed and deployed custom machine learning models to forecast economic trends, predict financial conditions, and detect anomalies, with a special focus on emerging markets, including Latin America • Conducted research to expand data product capabilities and enhance analytical features, contributing to the continuous evolution of financial data solutions • Collaborated on public outreach programs, educating clients and students on data science and analytics, while reinforcing Bloomberg's brand presence • Mentored colleagues in best practices for computer programming and data analysis, conducting one-on-one or group training sessions. Supported journalists and business stakeholders with data-driven research and analysis to drive strategic insights.

2016–present **nublia**

São Paulo, SP

Solo data science and technical consultant, online lecturer (concurrent with other activities)

Designed and implemented ETL pipelines to integrate and process large datasets, ensuring efficient and accurate data flow • Applied machine learning and data science techniques to drive business growth and innovation, including customer segmentation models and click-through rate forecasting • Developed data science and analytics training programs, training cohorts of 20+ technical professionals seeking to enhance their skills.

2014–2016 **Centro de Biologia Marinha, Universidade de São Paulo**

São Sebastião, SP

Postdoctoral research fellow

Collected and analyzed data through in situ field measurements for various research projects, including the SIMCosta mooring network project, enhancing the understanding of coastal dynamics • Managed and analyzed biogeochemical datasets using data mining and time-series analysis techniques for the Biota/FAPESP Araçá project, providing insights into ecosystem health and function in Araçá Bay • Designed and implemented a MySQL database for the storage, management, and retrieval of georeferenced data, supporting research initiatives • Developed coupled numerical models integrating hydrodynamics and phytoplankton growth processes to simulate and analyze ecosystem dynamics in marine environments • Taught and mentored graduate and undergraduate students through lectures on data analysis and numerical modeling, fostering their academic development and professional skills • CAPES fellow.

EDUCATION

2009–2014 Sc.D. Physical Oceanography

Instituto Oceanográfico, Universidade de São Paulo

Thesis title: Mesoscale eddies, Rossby waves and the spectra from altimetry data.

2008–2009 Pg.C. Ocean Observatories

Bermuda Institute of Ocean Sciences

Thesis title: Thesis title: Nutrient pumping induced by first mode baroclinic Rossby waves in the Sargasso Sea.

2006–2008 M.Sc. Physical Oceanography

Instituto Oceanográfico, Universidade de São Paulo

Thesis title: Spectral variability distribution of baroclinic Rossby waves in the Atlantic Ocean and particularly in the region of the Abrolhos archipelago.

2000–2004 B.Sc. Physics

Instituto de Física, Universidade de São Paulo

TECHNICAL SKILLS

Open source **pycwt**: Free and open source Python module for spectral analysis and statistical significance tests using the continuous wavelet transform (CWT).

Data analysis Data mining, dynamical systems, K-nearest neighbours, multi-variate linear and logistic regressions, artificial neural networks, principal component analysis, data visualization, wavelet and Fourier spectral analysis.

Computer programming Python, MATLAB/Octave, SQL, Visual Basic.

Databases Design and management of PostgreSQL, MySQL/MariaDB, SQLite databases.

OTHER INTERESTS

Volunteering Online mentor to early career scientists and post graduate students in marine and aquatic sciences through the **Trevor Platt Science Foundation** since 2022.
 • English tutor since 2019 at *Cidadão Pró-Mundo*, which offers free courses to young people and adults from public schools in Brazil.

Rowing National and continental rowing umpire accredited by *Confederação Brasileira de Remo* (CBR) and *Confederación Sudamericana de Remo* (CSAR).

Hobbies Woodwork, sourdough bakery, cycling